CLAIMS

1. In a radio channel control device of a mobile communication system using an autonomous distributed type channel selection scheme in which whether an assignment of a frequency/radio channel is possible or not is judged according to a receiving level of a level measurement channel at a mobile station, a radio channel assignment judgement method characterized by:

storing and managing an optimal carrier-to-interference ratio (CIR) to be used as a threshold in judging whether the assignment of the frequency/radio channel is possible or not, in correspondence to each value that can be taken by the receiving level of the level measurement channel at the mobile station, in a table in advance;

receiving a communication request and a measurement result of the receiving level of the level measurement channel in a radio zone that is a target of the communication request, that are transmitted from the mobile station at a time of making the communication request; and

adaptively selecting the optimal carrier-to-interference ratio (CIR) that is corresponding to a received receiving level measurement result from said table, and judging whether the assignment of the frequency/radio channel is possible or not according to a selected carrier-to-interference ratio (CIR).

2. The radio channel assignment judgement method as described in claim 1, characterized by selecting an unused assignment candidate frequency/radio channel, requesting the mobile station to measure an interference receiving level of a selected assignment candidate frequency/radio channel and transmit a measurement result of the interference receiving level, judging whether a received

interference receiving level satisfies the optimal carrier-to-interference ratio (CIR) selected from said table or not, and assigning the selected assignment candidate frequency/radio channel if the received interference receiving level satisfies the optimal carrier-to-interference ratio (CIR) selected from said table, when the communication request and the measurement result of the receiving level of the level measurement channel are received from the mobile station.

8. A radio channel control device of a mobile communication system using an autonomous distributed type channel selection scheme in which whether an assignment of a frequency/radio channel is possible or not is judged according to a receiving level of a level measurement channel at a mobile station, the radio channel control device characterized by having:

a table for storing and managing an optimal carrier-to-interference ratio (CIR) to be used as a threshold in judging whether the assignment of the frequency/radio channel is possible or not, in correspondence to each value that can be taken by the receiving level of the level measurement channel at the mobile station, in advance;

a reception unit for receiving a communication request and a measurement result of the receiving level of the level measurement channel in a radio zone that is a target of the communication request, that are transmitted from the mobile station at a time of making the communication request; and

a judgement unit for adaptively selecting the optimal carrier-to-interference ratio (CIR) that is corresponding to a received receiving level measurement result from said table, and judging whether the assignment of the frequency/radio channel is possible or not according to a selected carrier-to-interference ratio (CIR).

4. The radio channel control device as described in claim 3, characterized by further having an assignment unit for selecting an unused assignment candidate frequency/radio channel, requesting the mobile station to measure an interference receiving level of a selected assignment candidate frequency/radio channel and transmit a measurement result of the interference receiving level, judging whether a received interference receiving level satisfies the optimal carrier-to-interference ratio (CIR) selected from said table or not, and assigning the selected assignment candidate frequency/radio channel if the received interference receiving level satisfies the optimal carrier-to-interference ratio (CIR) selected from said table, when the communication request and the measurement result of the receiving level of the level measurement channel are received from the mobile station.

5. In a radio channel control device of a mobile communication system using a TDMA mobile communication scheme in which a plurality of radio channels are formed in a radio carrier by time division multiplexing the radio carrier and each one of a plurality of mobile stations uses a respective radio channel, a radio channel assignment judgement method characterized by:

receiving a communication request and a measurement result of a receiving level of a level measurement channel in a radio zone that is a target of the communication request, that are transmitted from one mobile station at a time of making the communication request; and

judging whether there is another mobile station that is carrying out communication by a radio channel in an identical radio carrier as a radio channel to be assigned to said one mobile station or not, and if there is said another mobile station, selecting an unused assignment

candidate radio channel while comparing a control frequency receiving level in a radio zone used for communication at said another mobile station and the receiving level of the level measurement channel at said one mobile station, and judging an assignment of a radio channel to said one mobile station according to a comparison result.

6. The radio channel assignment judgement method as described in claim 5, characterized in that the judging step makes a request to said another mobile station to measure the control frequency receiving level in the radio zone used for communication and transmit a measurement result of the control frequency receiving level, receives the control frequency receiving level measured and transmitted by said another mobile station in response to the request, and compares a received control frequency receiving level and the receiving level of the level measurement channel at said one mobile station.

7. The radio channel assignment judgement method as described in claim 5, characterized by assigning a selected unused assignment candidate radio channel to said one mobile station, if the receiving level of the level measurement channel at said one mobile station is greater than the control frequency receiving level in the radio zone used for communication at said another mobile station by a prescribed value or more at the judging step.

8. A radio channel control device of a mobile communication system using a TDMA mobile communication scheme in which a plurality of radio channels are formed in a radio carrier by time division multiplexing the radio carrier and each one of a plurality of mobile stations uses a respective radio channel, a radio channel control device characterized by having:

a reception unit for receiving a communication request and a measurement result of a receiving level of a level measurement channel in a radio zone that is a target of the communication request, that are transmitted from one mobile station at a time of making the communication request; and

a judgement unit for judging whether there is another mobile station that is carrying out communication by a radio channel in an identical radio carrier as a radio channel to be assigned to said one mobile station or not, and if there is said another mobile station, selecting an unused assignment candidate radio channel while comparing a control frequency receiving level in a radio zone used for communication at said another mobile station and the receiving level of the level measurement channel at said one mobile station, and judging an assignment of a radio channel to said one mobile station according to a comparison result.

9. The radio channel control device as described in claim 8, characterized in that the judgement unit makes a request to said another mobile station to measure the control frequency receiving level in the radio zone used for communication and transmit a measurement result of the control frequency receiving level, receives the control frequency receiving level measured and transmitted by said another mobile station in response to the request, and compares a received control frequency receiving level and the receiving level of the level measurement channel at said one mobile station.

10. The radio channel control device as described in claim 8, characterized by further having an assignment unit for assigning a selected unused assignment candidate radio channel to said one mobile station, if the receiving level of the level measurement channel at said one mobile station

is greater than the control frequency receiving level in the radio zone used for communication at said another mobile station by a prescribed value or more at the judgement unit.